
पावर ट्रैक सिस्टम

भाग 21 दीवारों पर एवं सीलिंग पर लगाने हेतु
पावर ट्रैक की विवरणातात्मक अपेक्षाएं

Power Track System

Part 21 Particular Requirements for Power Track
Systems Intended for Wall and Ceiling Mounting

ICS 29.060.10; 29.120.10

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भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुरशाह ज़फर मार्ग, नई दिल्ली – 110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI-110002
www.bis.gov.in www.standardsbis.in

FOREWARD

This Indian Standard (Part 21) was adopted by the Bureau of Indian Standards, after the draft finalized by the Electrical Wiring Accessories Sectional Committee had been approved by the Electrotechnical Division Council.

This part specifies the particular requirements and tests for PT systems intended for mounting on walls and/or ceiling. The other part in the series is:

Part 1 General requirements

This standard is to be used in conjunction with Part 1 of this standard.

This Part 21 supplements or modifies the corresponding clauses of part 1. Where a particular clause or sub clause of part 1 is not mentioned in this Part 21, that clause or sub clause applies as far as is reasonable. Where this Part 21 states “addition” or “replacement”, the relevant text of part 1 is to be adapted accordingly. Sub clauses, tables and figures which are in addition to those in part 1 are numbered starting with 101.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 ‘Rules of rounding off numerical values (*revised*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

POWER TRACK SYSTEMS

PART 21 PARTICULAR REQUIREMENTS FOR POWER TRACK SYSTEMS INTENDED FOR WALL AND CEILING MOUNTING

1 SCOPE

For this Indian Standard (Part 21) clause 1 of IS 17345 (Part 1) is applicable except as follows:

1.1 Addition

This part specifies the particular requirements and tests for PT systems intended for mounting on walls and/or ceiling. They may be installed flush or semi-flush, surface mounted, suspended or spaced away from the surface using fixing devices.

2 REFERENCES

Clause 2 of IS 17345 (Part 1) is applicable except as follows:

<i>IS No.</i>	<i>Title</i>
17345 (Part 1) : 2019	Power track systems: Part 1 General requirements

3 TERMS AND DEFINITIONS

For the purpose of this standard, the definitions given in 3 of IS 17345 (Part 1) shall apply, in addition to the following.

3.1 Wall PT System — PT system which is suitable for mounting on a vertical surface or a vertical structure directly or with the use of fixing devices.

3.2 Ceiling PT System — PT system which is suitable for mounting or suspending beneath a horizontal surface or horizontal structure directly or with the use of fixing devices.

3.3 Fixing Devices — System component used for the mechanical connection of the PT system to the supporting surface or supporting structure.

3.4 External Load — Mechanical load applied to the PT system from outside and not due to the mass of the system components.

3.5 Suspension Means — Mechanism for supporting a load (for example, a luminaire) that hangs from the PT system.

3.6 Skirting PT System — PT system which is suitable for mounting on the lower part of a wall close to the floor.

4 GENERAL REQUIREMENTS

For the purpose of this standard, the requirements given in 4 of IS 17345 (Part 1) shall apply.

5 GENERAL NOTES ON TESTS

Part 1 is applicable except as follows:

For the purpose of this standard, the tests given in 5 of IS 17345 (Part 1) shall apply, in addition to the following.

3 samples: subclause 14.3.101

3 samples: subclause 14.3.102

3 samples: subclause 14.3.103

6 RATINGS

Ratings included in 6 of IS 17345 (Part 1) are applicable for this standard.

7 CLASSIFICATION

Classification included in 7 of IS 17345 (Part 1) shall apply, in addition to the following.

7.101 According to External Load Withstand Capability

7.101.1 Wall PT System

7.101.1.1 Wall PT system not intended to withstand an external load.

7.101.1.2 Wall PT system capable of withstanding an external load from above.

7.101.2 Ceiling PT System

7.101.2.1 Ceiling PT system not intended to withstand an external load.

7.101.2.2 Ceiling PT system capable of withstanding an external load from above.

7.102 According to Provision for Suspended Loads

7.102.1 PT system without provision for suspended loads.

7.102.2 PT System with provision for suspended loads.

8 MARKING AND DOCUMENTATION

Marking and documentation included in 8 of IS 17345 (Part 1) shall apply, in addition to the following.

8.5 Addition of the following items:

- a) For PT system according to 7.101.1.2 and 7.101.2.2, the maximum load in kg, which can be withstood
- b) For PT system according to 7.102.2, the maximum load in kg, which can be suspended.

9 CONSTRUCTION

Construction included in 9 of IS 17345 (Part 1) shall apply for this standard.

10 CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION

For clearance, creepage distances and solid insulation 10 of IS 17345 (Part 1) shall apply for this standard.

11 PROTECTION AGAINST ELECTRIC SHOCK

For protection against electric shock 11 of IS 17345 (Part 1) shall apply for this standard.

12 TERMINALS AND TERMINATIONS

For terminals and terminations 12 of IS 17345 (Part 1) shall apply for this standard.

13 SCREWS, CURRENT CARRYING PARTS AND CONNECTIONS

For screws, current carrying parts and connections 13 of IS 17345 (Part 1) shall apply.

14 MECHANICAL STRENGTH

Clause 14 of IS 17345 (Part 1) is applicable except as follows:

14.3 Static Load Test

Additional sub-clauses:

14.3.101 External Load Test

PT systems shall withstand mechanical stresses applied to the PT system. Compliance is checked by the following test.

At least two lengths of the PT system are joined together including the electrical connection and installed according to the manufacturer's instructions to a rigid support. The joint shall be placed midway between the fixing devices.

A steel plate with a length of (150 ± 20) mm, a width not less than the PT system and a thickness of (5 ± 1) mm is positioned on the upper surface of the

PT system centrally at the midpoint between the supports. For classifications 7.101.1.1 and 7.101.2.1, a vertical force is gradually applied on the steel plate up to (350 ± 10) N over a period of (60 ± 1) s and maintained for (60 ± 1) min. For classifications according to 7.101.1.2 and 7.101.2.2, a vertical force is gradually applied on the steel plate up to (750 ± 10) N or with a force declared by the manufacturer ± 2 percent, whichever is the higher over a period of (60 ± 1) s and maintained for (60 ± 1) min.

During the tests, the sample shall not break and shall neither have parts that have worked loose, nor shall it show any deformation likely to impair electrical safety.

After the test:

- a) The sample shall comply with 10 and 11.1 of IS 17345 (Part 1).
- b) There shall be no permanent deformation, which would prevent the correct insertion and withdrawal of the tap-off units.
- c) The samples shall withstand the test according to 15.2 but without the pre-conditioning of 15.1, and the tests of 11.3 of IS 17345 (Part 1).

14.3.102 PT Systems with Provision for Suspended Loads

PT systems classified according to 7.102.2 shall withstand mechanical loads applied to the suspension means in normal use. Compliance is checked by the following test.

The provision for the suspension means is installed as for normal use according to the manufacturer's instructions. Screwed connections, if any, intended to provide mechanical support of the suspension means are tightened to the torque given in the relevant column of Table 5 of IS 17345 (Part 1) if not specified by the manufacturer.

The suspension means is then loaded, without jerks, with a force declared by the manufacturer ± 2 percent or if no force is declared then the test shall be performed with a force of (250 ± 5) N, for (24 ± 1) h.

During the test, the PT system and the suspension means shall not become detached from one another and shall show no damage, which leads to non-compliance with this standard.

14.3.103 PT Systems with Tap-off Units

In normal use, the construction of the tap-off unit shall be, such as to prevent disconnection from the PT or live parts becoming accessible. Compliance is checked by the following test.

The tap-off unit is inserted as in normal use 10 times and withdrawn 10 times in the tap-off outlet with the PT system installed in normal use as declared by the manufacturer.

The tap-off unit is inserted once more into the tap-off outlet as in normal use and a withdrawal force of (30 ± 1) N is applied for (60 ± 5) s parallel to the force on the tap-off unit in normal use as declared by the manufacturer.

The tap-off unit shall not become disconnected from the PT and live parts shall not become accessible when tested according to 11.1.1.1 of IS 17345 (Part 1).

15 INSULATION RESISTANCE TEST AND DIELECTRIC STRENGTH TEST

For this clause 15 of IS 17345 (Part 1) is applicable.

16 NORMAL OPERATION

For normal operation 16 of IS 17345 (Part 1) shall apply.

17 TEMPERATURE RISE

For temperature rise, 17 of IS 17345 (Part 1) shall apply.

18 SHORT-CIRCUIT PROTECTION AND SHORT-CIRCUIT WITHSTAND STRENGTH

For short-circuit protection and short-circuit withstand strength 18 of IS 17345 (Part 1) shall apply.

19 RESISTANCE TO HEAT

For resistance to heat 19 of IS 17345 (Part 1) shall apply.

20 FIRE HAZARD

For fire hazard, 20 of IS 17345 (Part 1) shall apply.

21 EXTERNAL INFLUENCES

For external influences, 21 of IS 17345 (Part 1) shall apply in addition to the following.

21.2.101 Protection against Ingress of Water for Wet Treatment of the Floor

Where PT systems are fitted at the skirting position and the floor is subject to wet treatment then the PT system shall have a minimum degree of protection of IP X 4.

22 ELECTROMAGNETIC COMPATIBILITY

For electromagnetic compatibility, 22 of IS 17345 (Part 1) shall apply.

ANNEXES

The annexes of IS 17345 (Part 1) are applicable.

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This Indian Standard has been developed from Doc No.: ETD 14 (12686).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 2323 0131, 2323 3375, 2323 9402

Website: www.bis.gov.in

Regional Offices:

	Telephones
Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	{ 2323 7617 2323 3841
Eastern : 1/14 C.I.T. Scheme VII M, V.I.P. Road, Kankurgachi KOLKATA 700054	{ 2337 8499, 2337 8561 2337 8626, 2337 9120
Northern : Plot No. 4-A, Sector 27-B, Madhya Marg CHANDIGARH 160019	{ 265 0206 265 0290
Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600113	{ 2254 1216, 2254 1442 2254 2519, 2254 2315
Western : Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093	{ 2832 9295, 2832 7858 2832 7891, 2832 7892

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Published by BIS, New Delhi